COMPANY FOR PRODUCTION, DESIGN AND TRADE
BLIST
KRALJA ALEKSANDRA OBRENOVIĆA 13 , 14104 BELOŠEVAC,
VALJEVO, SRBIJA

ENG

USAGE AND MAINTENANCE MANUAL FOR SOLID FUEL STOVES FOR CENTRAL HEATING (STOVES WITH WATER JACKET)

DEAR CUSTOMER,

Congratulations on your purchase of a “BLIST” solid fuel stove for central heating (stove with water jacket). Please install and use the appliance in accordance with this manual. This will help ensure safe operation and long service life.

Table 1. Technical specification:

Model name	**B2 E 4.0**	**Roma E 4.0**
Total power range [KW]	9-14	13-20
Radiant power range [KW]	5-6	6-7
Power given up to the water range [KW]	4-8	7-13
Water boiler volume [l]	16	22
Net weight [kg]	86	98
Dimension [mm]	465x465x900	485x470x1070
Fuel consumption (at nominal heat output) [kg/h]	2.4	3.81
Output and return lead connection	R1”	R1”
Input/output for filling/emptying system	R1/2”	R1/2”
Flue coupling diameter [mm]	120	120
Recommended chimney inner diameter [mm]	140-160	140-160
Maximum operating water temperature [°C]	90	90
Maximum operating pressure [bar]	2.0	2.0

IMPORTANT — This manual shall be used together with the Technical Data Sheet supplied with the appliance. The Technical Data Sheet forms an integral part of these appliance instructions and contains the model-specific technical parameters required by EN 16510-1:2022. Additional product information, drawings and spare parts information are available in the Product Data Sheet at www.blist.rs/download.
Power range represents the recommended operating heat-output range. For the certified nominal heat output and other model-specific performance data, refer to the Technical Data Sheet supplied with the appliance.

1. Description and purpose of the stove:

- BLIST solid fuel stoves for central heating are designed for efficient combustion of solid fuels and are equipped with an integral water boiler (water jacket). Heat is transferred both directly to the installation room and to the water circuit of the central heating system. The appliances are manufactured from sheet steel, the combustion chamber is lined with refractory materials and the grate is made of cast iron. Primary, secondary and tertiary combustion air systems are used, depending on the model, to support efficient and clean combustion. The appliances are coated with special heat-resistant paint, and the firebox door is fitted with heat-resistant ceramic glass.

The appliance is intended for heating residential and other suitable premises through a hot-water central heating system, while also providing direct heat to the room in which it is installed. The appliance shall be connected to a correctly designed and installed water heating system before use.

The appliance may be connected to an open-vented or closed hot-water heating system, provided that the system is designed and equipped with the required safety, expansion, circulation and temperature-control devices described in this manual and required by applicable national and local regulations.

2. Installation:

- All applicable national and local regulations, including construction and fire safety requirements, shall be observed when installing and connecting the appliance.
- The appliance shall be installed on a level and stable surface with sufficient load-bearing capacity. If necessary, appropriate measures shall be taken to ensure these conditions.
- The appliance shall not be installed too close to combustible materials or objects (wood, textiles, plastics, furniture, etc.) or to heat-sensitive equipment. If the appliance is installed on or near combustible materials, the floor and surrounding combustible materials shall be adequately protected in accordance with the minimum safety distances specified in the Technical Data Sheet supplied with the appliance, on the CE marking/data plate located on the appliance, and in applicable national and local installation regulations.
-Do not stack or store flammable materials in the lower storage compartment so high that they come into contact with or are in close proximity to the underside of the combustion chamber.
- When connecting the appliance to the chimney, all applicable national and local regulations shall be observed. Installation should be carried out or verified by a qualified installer or competent chimney sweep.



- The chimney shall be suitable for the appliance and shall provide at least the minimum flue draught specified in the Technical Data Sheet supplied with the appliance.

The required chimney height, cross-section and position of the chimney termination depend on the chimney design, building and roof configuration, surrounding conditions and applicable national and local regulations.

- The chimney shall be properly designed and installed to ensure adequate and stable draught under normal operating conditions (see Figure 1).
- The connection between the appliance and the chimney shall be properly sealed and designed so as not to adversely affect the required chimney draught.
- Where more than one appliance is connected to the same chimney, such installation shall only be carried out where permitted by applicable national and local regulations and where the chimney is suitable for multiple-appliance connection. The flue connection pipes shall not protrude into the free cross-section of the chimney, and all connections between the flue pipes and the chimney shall be properly sealed.

- Where two chimney flues run parallel to each other, each flue shall be provided with suitable access for inspection and cleaning, in accordance with applicable installation requirements. Cleaning openings shall be properly closed and sealed during operation of the appliance. (see Figure 1).
- If the chimney is new or has recently been constructed or repaired, it shall be sufficiently dry and suitable for use before the appliance is operated at full load.
- Sufficient access shall be provided at the installation location to allow safe inspection, maintenance and cleaning of the appliance, flue connection and chimney.
- The chimney draught should be checked by a qualified installer or competent chimney sweep to ensure that it meets the minimum value specified in the Technical Data Sheet supplied with the appliance. Figure 2 illustrates a simple indicative check of draught using a candle; this method is for visual indication only and does not replace measurement with appropriate instruments.

Figure 1 – Schematic example of appliance connection to a chimney

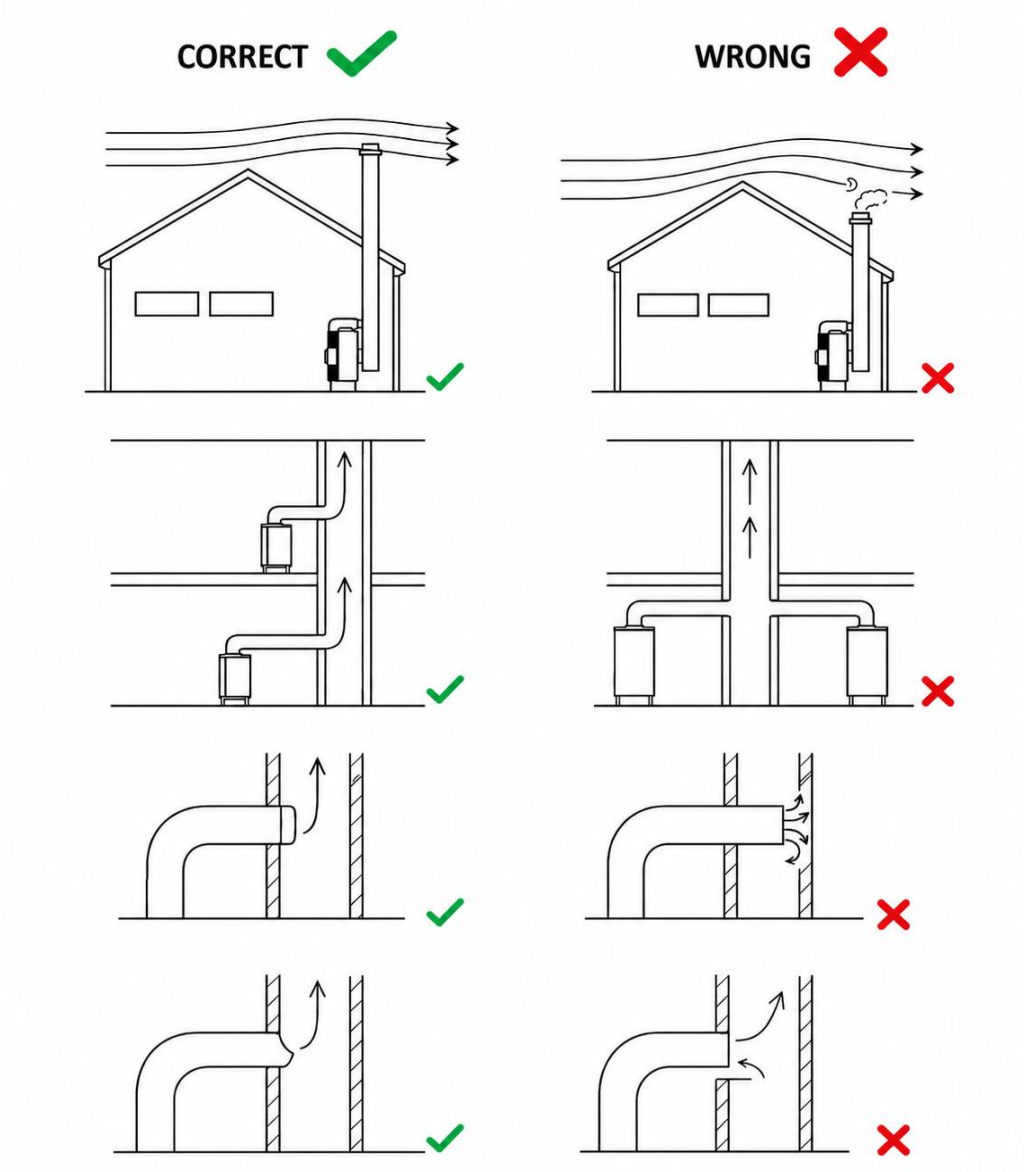
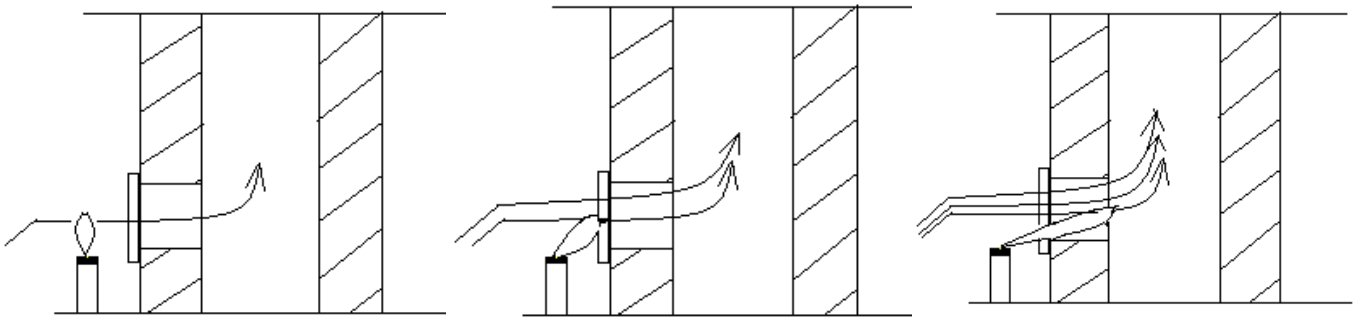


Figure 2 - Checking of the flue draught



weak air-flow | good air-flow | too strong air-flow

Connection to the central heating system:

- Installation and connection to the water heating system shall be carried out by a qualified installer in accordance with applicable national and local regulations and good engineering practice. The heating system shall be designed in accordance with applicable requirements for hot-water heating systems, including EN 12828 where relevant.
- The appliance shall never be fired unless it is correctly connected to the heating system, completely filled with water and all air has been removed from the appliance and heating system. Before first firing, check the complete system for leakage and verify that circulation, valves, expansion equipment and safety devices operate correctly.
- The appliance flow and return connections are R1" and the filling/draining connection is R1/2". The maximum permissible operating pressure of the heating system is 2 bar. The maximum operating water temperature is 90°C. Recommended operating water temperature range is between 55°C and 75°C.

- The circulation pump, expansion vessel, safety valve, air vents, thermomanometer and all other safety and control equipment shall be selected and installed in accordance with the system design and applicable regulations. No shut-off device may be installed between the appliance and a safety valve where this could isolate the safety device from the appliance.

Open-vented heating system:

- In an open-vented heating system, an open expansion vessel and unobstructed safety/expansion lines shall be installed and sized in accordance with applicable regulations. The system shall provide a reliable means of dissipating excess heat from the boiler. The recommended arrangement shown in Figure 3.1 also includes a pressure safety valve set to a maximum of 2 bar.

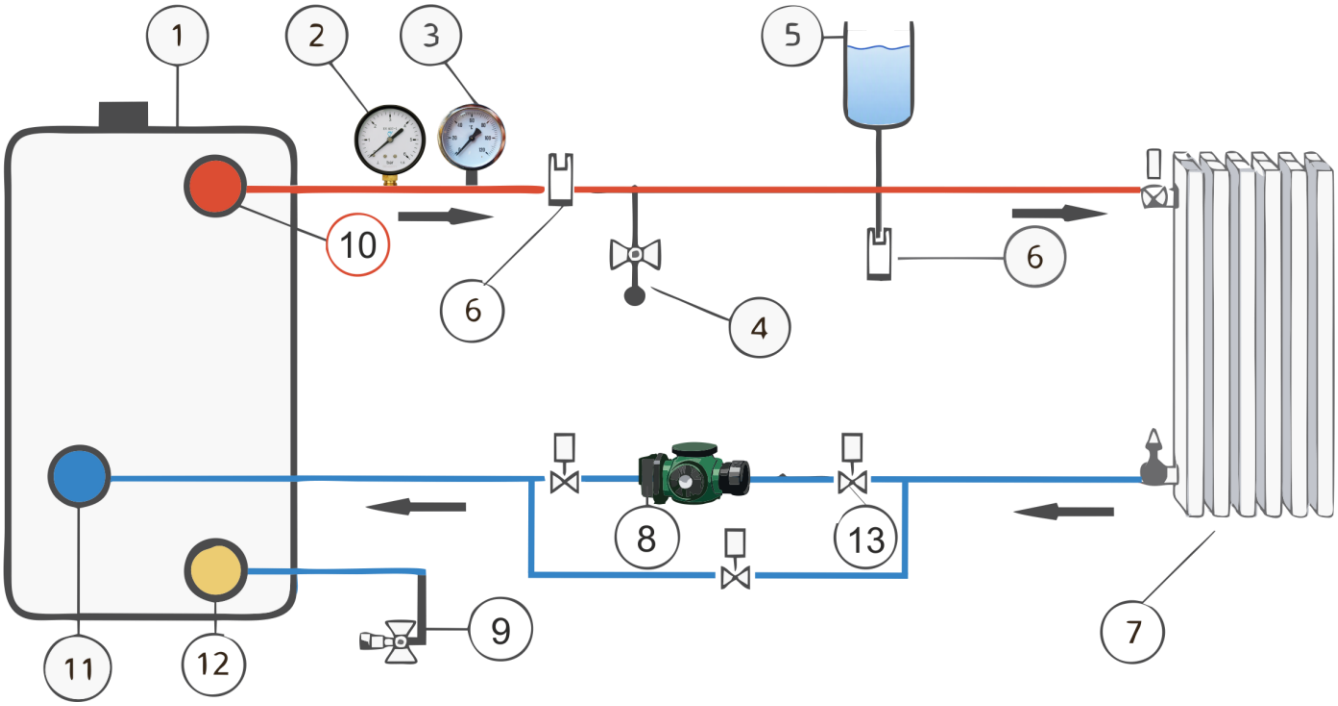


Figure 3.1 – Recommended schematic example of an open-vented heating system

1. Stove for central heating
2. Manometer (up to 4 bar)
3. Thermometer (up to 120ºC)
4. Pressure safety valve (max 2 bar)
5. Open expansion vessel
6. Automatic air vents
7. Heating body (radiator)
8. Circulation pump
9. Valve for water filling/emptying
10. Output lead connection (hot water supply)
11. Return lead connection (water return)
12. Input/output for filling/emptying system
13. Valves

Closed heating system:

-In a closed heating system, a correctly sized closed expansion vessel, a pressure safety valve set to a maximum of 2 bar and a suitable thermal overheating protection device shall be installed. The thermal safety device shall protect the appliance against excessive water temperature in the event of insufficient circulation, circulation pump failure or other operating conditions that may cause overheating.

-For thermal overheating protection, a temperature relief valve with automatic filling and an integrated temperature sensor, such as **Caleffi 544501**(see Figure 3.3) **or equivalent**, may be used. The valve shall be installed on the flow pipe close to the appliance, in accordance with the valve manufacturer's installation instructions. It shall be connected to a reliable cold-water supply and a safe discharge/drain. When the set temperature is reached, the valve discharges overheated water from the heating system while simultaneously admitting replacement cold water. Caleffi 544501 is set to operate at **100 °C**.

-Alternatively, a temperature relief valve with automatic filling and a remote temperature sensor, such as **Caleffi 544400 or equivalent**, may be used. The remote sensor shall be installed in a suitable pocket

on the flow pipe close to the appliance, in accordance with the device manufacturer's installation instructions.
-Thermal safety devices and the related cold-water supply, discharge pipework and accessories are not supplied as standard with the appliance unless explicitly stated otherwise.

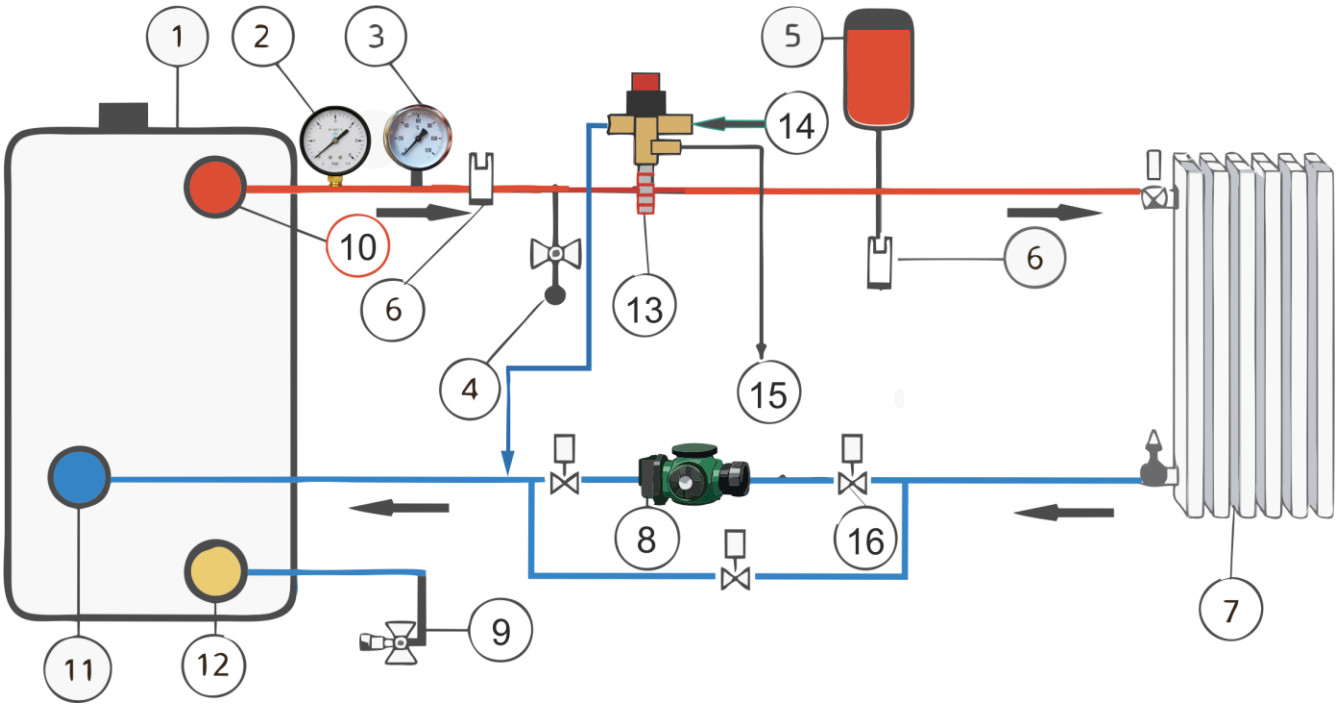


Figure 3.2 – Recommended schematic example of a closed heating system with thermal overheating protection

1. Stove for central heating
2. Manometer (up to 4 bar)
3. Thermometer (up to 120ºC)
4. Pressure safety valve (max 2 bar)
5. Closed expansion vessel
6. Automatic air vents
7. Heating body (radiator)
8. Circulation pump
9. Valve for water filling/emptying
10. Output lead connection (hot water supply)
11. Return lead connection (water return)
12. Input/output for filling/emptying system
13. Thermal safety device (Caleffi 544501 or equivalent)
14. Cold mains water
15. Safe discharge / drain
16. Valves

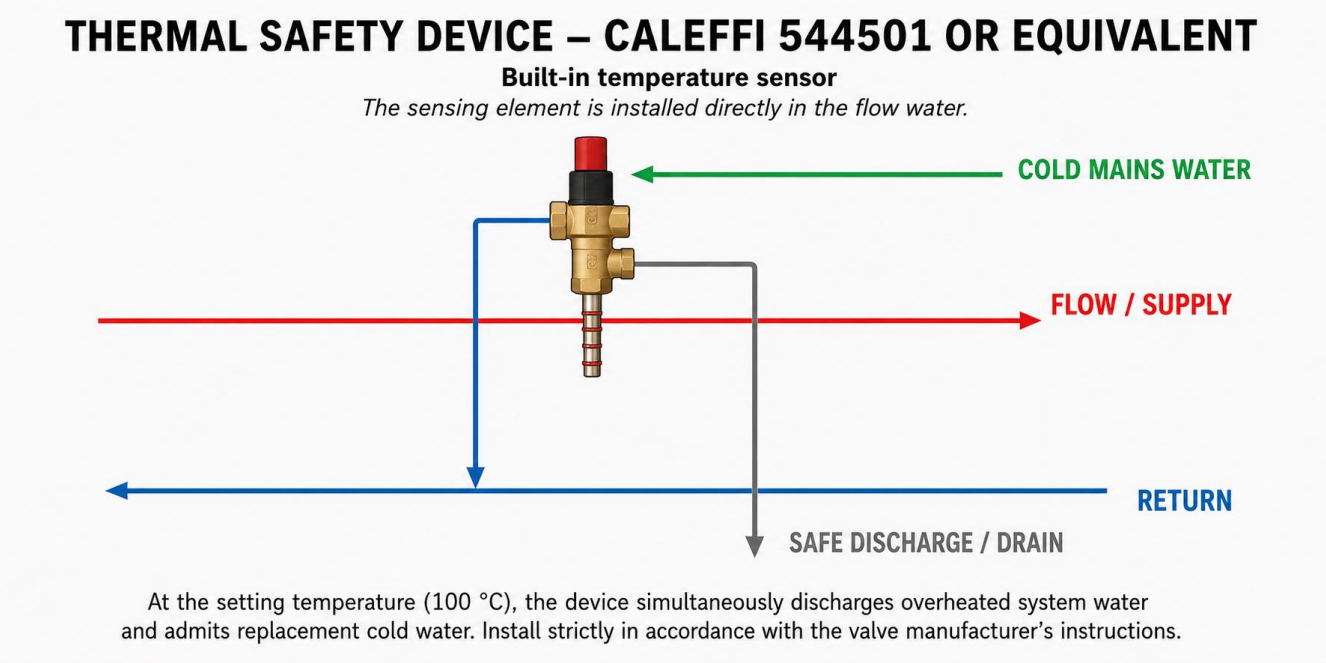


Figure 3.3 – Functional arrangement of a thermal safety device with built-in temperature sensor (example: Caleffi 544501 or equivalent)

Manufacturer recommendation:

- As a general manufacturer recommendation for these appliances, the total water volume contained in the connected radiators should not exceed approximately twice the water capacity of the appliance boiler. The final system design and sizing remain the responsibility of the qualified heating-system designer/installer.

- During initial operation, a small amount of condensation may occur while the appliance and water circuit are warming up. Persistent condensation may indicate excessively low water/return temperature, unsuitable fuel, poor combustion or an incorrectly designed heating system and should be investigated.

3. Air regulation and lighting the fire:

- Fresh air is necessary for combustion and the proper operation of the appliance. Adequate combustion air supply shall therefore be ensured in the room where the appliance is installed. Extractor fans, cooker hoods and other devices that extract air from the room may affect the safe operation of the appliance by creating negative pressure. Where such devices are installed, sufficient combustion air supply shall be ensured in accordance with applicable national and local regulations. If necessary, consult a qualified installer or competent chimney sweep. If an adequate combustion air supply is not provided, incomplete combustion may occur, potentially causing combustion products and hazardous gases to enter the room.

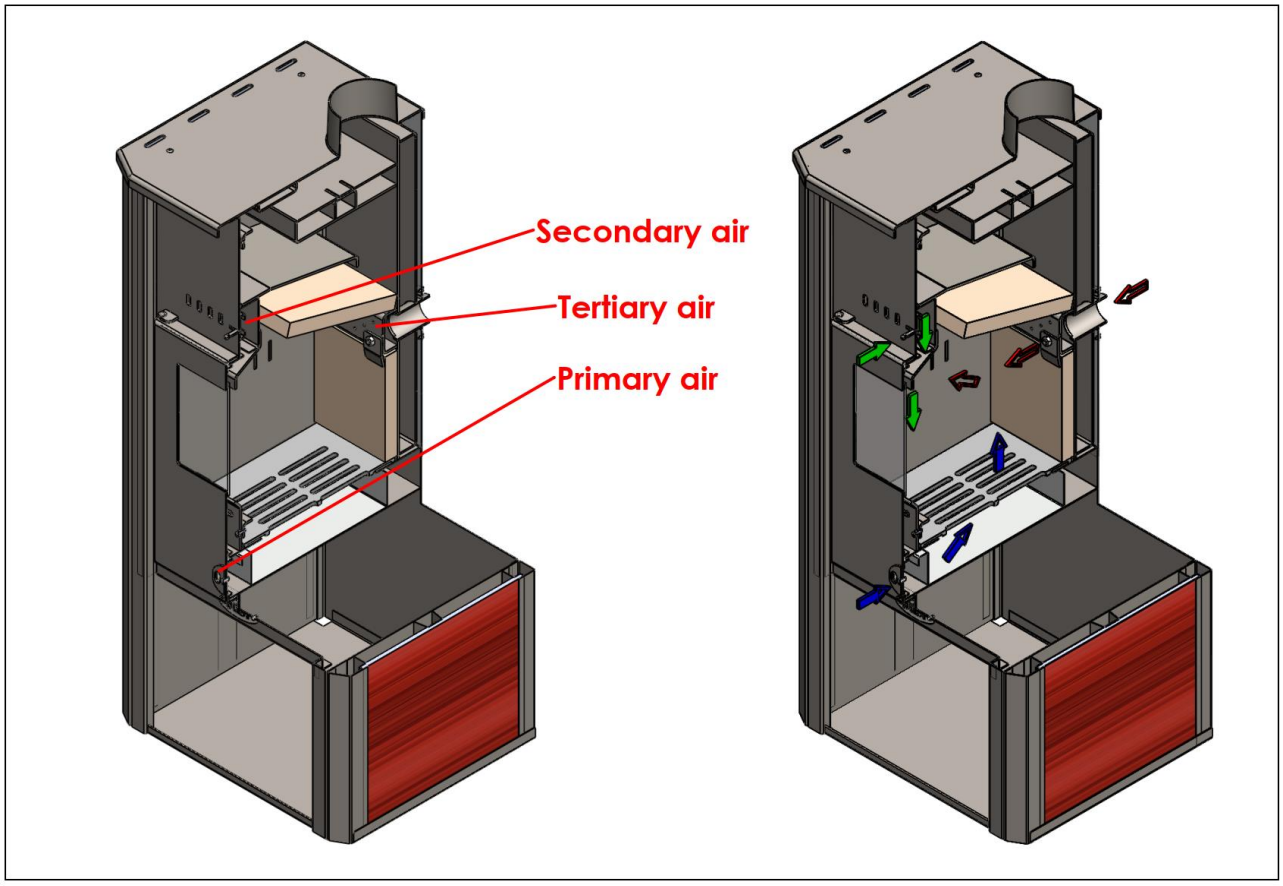


Figure 3 - Air regulation

Depending on the model, the appliances are equipped with primary, secondary and tertiary combustion air systems to support efficient and clean combustion.
When using the door handle or adjusting the primary and secondary air controls, use the protective glove supplied with the appliance. Otherwise, there is a risk of burns.

- **The primary air regulator** is located on the front door. By rotating the knob, you can increase or decrease the primary air supply (see Figure 3a).

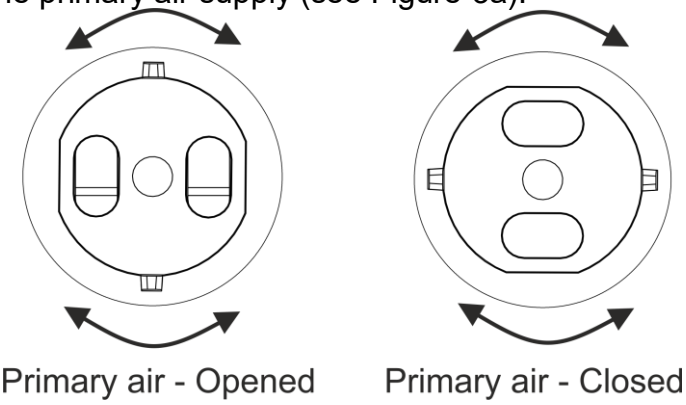


Figure 3a - Primary air regulator

Procedure for lighting the fire: Before lighting, fully open the primary air regulator and open the appliance door. Place crumpled paper, kindling and/or a suitable commercially available

firelighter on the grate and ignite it. Once the fire is established, the door may be left slightly open for approximately 1–2 minutes and shall then be closed. Build up the fire gradually to allow the combustion chamber, glass and chimney to warm up and to reduce the risk of condensation. Add larger pieces of wood gradually and avoid overloading the combustion chamber, as excessive fuel may restrict the air supply and impair combustion. Do not operate the appliance with the door open except during lighting and refuelling.
** When the fire is well established, close the primary air and regulate the combustion with the secondary air (Figure 3b).*

-**The secondary air regulator (+/-)**
The secondary air regulator lever is located above the combustion chamber door. By moving the lever left or right towards the (+) or (-) position (see Figure 3b), you increase or decrease the secondary air supply.
Operating with an insufficient secondary air supply may cause soot deposits on the glass. Secondary air helps keep the glass cleaner, regulates combustion intensity and supports efficient combustion.

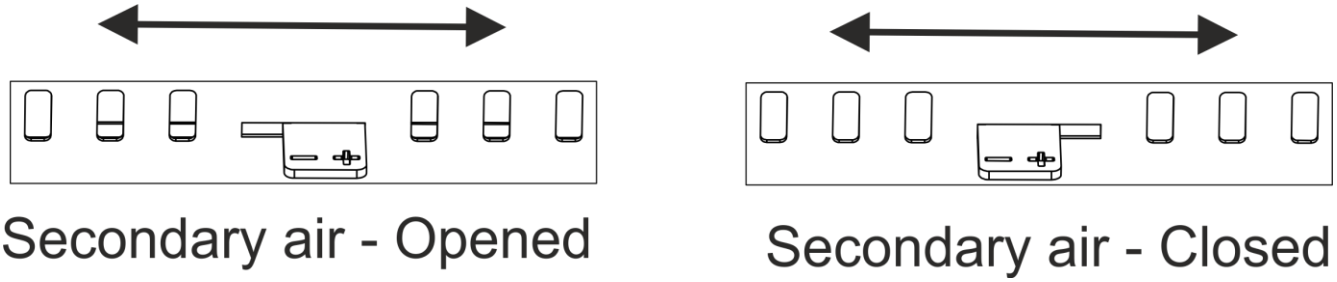


Figure 3b - Secondary air regulator

* The type and number of adjustable combustion air controls depend on the appliance model. Refer to the Technical Data Sheet and the appliance controls for the applicable configuration.

-Tertiary air (located at the rear of the combustion chamber) supports more efficient and cleaner combustion and helps reduce the formation of soot and unburned combustion residues. A clean and bright combustion chamber is generally an indication of proper combustion.

4. Usage:
- Before lighting the appliance, verify that the heating system is filled, vented and ready for operation, that all required valves are in their correct operating position and that water circulation can take place. Do not operate the appliance with an empty, frozen, isolated or incorrectly pressurised water circuit.
- The intensity of combustion depends on the type and quality of the fuel used. It is recommended to use seasoned wood logs with a moisture content of no more than 20%.
The heat output of the appliance depends on the type and quality of the fuel used.
- During the first 8–10 hours of operation (approximately 1–2 days), operate the appliance gradually and avoid full-load operation to allow the materials to adapt to high temperatures. The heat-resistant paint will fully cure during the initial firing period. During this process, do not touch the painted surfaces or place objects on the appliance. During the first firing, an unpleasant odour and a small amount of smoke may occur as the paint cures. Ensure adequate ventilation of the room during this period.

Fire maintenance and refuelling:
- It is prohibited to use gas, alcohol or any other flammable liquid or fuel for lighting or

operating the appliance.
- Procedure for lighting the fire is explained in Point 3. The intensity of combustion is regulated using the combustion air controls as explained in Point 3.
- When refuelling the appliance, wait until the previous fuel load has burned down to a stable bed of glowing embers. Before opening the door, increase the combustion air supply. Open the door slightly and wait a few seconds to allow the pressure inside the combustion chamber to equalise, then open it slowly and carefully. Add the required amount of fuel and close the door. Keep the combustion air supply increased until the newly added fuel is burning well, then adjust the air controls to the required operating position. To achieve the nominal heat output, use the fuel load and refuelling interval specified in the Technical Data Sheet supplied with the appliance. Do not overload the combustion chamber or load fuel in a way that obstructs the combustion air openings. Do not exceed the maximum fuel filling height specified in the Technical Data Sheet supplied with the appliance. Do not allow the grate at the bottom of the firebox to become clogged with ash and unburned fuel residues. Clean the grate regularly.
- The appliance is designed to operate with the door closed, except during lighting and refuelling. Do not open the appliance door unnecessarily while the fire is burning.

- Empty the ash pan regularly. Do not allow it to overfill. A thin layer of ash may be left on the bottom of the combustion chamber during normal wood-burning operation.
- It is prohibited to burn waste or unsuitable fuels, including plastics, textiles, treated, painted or oil-contaminated wood and other materials not specified as suitable fuels for the appliance. Burning such materials may produce harmful or toxic emissions and may damage the appliance and chimney.

5. Maintenance:

Cleaning and maintenance shall only be carried out when the appliance is cold!
- At least once per heating season, have the heating-system safety devices, thermal safety valve, expansion vessel, circulation pump, pressure indication, air vents and water connections checked for correct operation and leakage. Safety devices shall not be blocked, isolated or modified.
- If water leakage is suspected from the boiler body or water connections, stop using the appliance and have it inspected by a qualified service technician. Do not confuse temporary start-up condensation with a permanent water leak.
- Empty the ash pan regularly.
- Periodically remove soot and unburned combustion residues from the appliance. Keeping the internal surfaces clean supports efficient operation. It is recommended to clean the appliance at least once a month, or more frequently if significant deposits or unburned residues accumulate in the combustion chamber.
- After each heating season, thoroughly clean the appliance, flue connection and chimney to remove soot and other combustion residues. During periods when the appliance is not in use, leave the combustion air controls in the maximum open position to allow air circulation inside the appliance and help prevent condensation.
- Before relighting after a prolonged period of non-use, check that the appliance, flue connection and chimney are free from blockage.
- Clean the upper chamber above the firebox annually, preferably at the end of the heating season, or more frequently if required. Remove the flue pipe, clean the flue outlet on the appliance with a suitable brush, and remove any accumulated soot using a suitable ash

vacuum cleaner.
- The upper vermiculite plate in the firebox is fragile. Handle it carefully during cleaning and when loading wood.
- Clean the glass on the appliance door regularly with a soft cloth. Clean the exterior of the appliance with a soft cloth and do not use abrasive or aggressive chemical cleaning agents, as they may damage the paint. Clean the appliance only when it is cold.

- At the end of the appliance's service life, it shall be dismantled and disposed of in accordance with applicable national and local regulations. Where possible, metal, glass, refractory materials and other components should be separated and sent for appropriate recycling or disposal.

6. IMPORTANT NOTICES

- During start-up of a cold appliance, condensation may appear on or around the water boiler and can be mistaken for a water leak. This temporary condensation should decrease and disappear as the appliance and heating system reach normal operating temperature. If moisture continues after the system is fully warm, stop using the appliance and have the boiler and connections checked for leakage.
- Ensure reliable water circulation during operation. Air in the system, a stopped circulation pump, closed valves or a blocked circuit can cause poor heating or rapid water-temperature rise. The appliance shall not be operated until the cause has been corrected.
- Use dry, suitable fuel and avoid prolonged operation with an excessively low return-water temperature, as this can increase condensation and deposits in the appliance.
-

Common problems and corrective actions:

Table 2 – Common problems and how to solve them

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Weak heating power	Wet/poor fuel; insufficient or excessive flue draught; dirty flue/chimney; weak water circulation; heating system too large for the appliance.	Use dry recommended fuel; check the chimney/flue and draught; clean if necessary; check pump operation, valve positions and bleed the system; verify system sizing.
Radiators heat poorly or unevenly	Air in the system; circulation pump not operating correctly; valves partly closed; circulation restricted.	Bleed the appliance, pipes and radiators; check pump operation and power supply; check valve positions and system circulation.
Water temperature rises rapidly	Insufficient/no water circulation; circulation pump failure; closed or blocked circuit; excessive firing.	Stop adding fuel, reduce/close combustion air controls and allow the appliance to cool safely. Check circulation and ensure the thermal safety device can operate. Do not use the appliance until the fault is corrected.
Smoke enters the room when the door is opened	Insufficient or unstable chimney draught; flue/chimney blockage; insufficient combustion-air supply or negative pressure in the room.	Open the firebox door slowly; check/clean the flue and chimney; ensure adequate combustion air and eliminate harmful room depressurisation.
Smoke leaks from appliance/flue joints	Blocked/dirty flue or chimney; damaged or incorrectly fitted seals.	Stop using the appliance if leakage is significant; clean and inspect the flue/chimney and have damaged seals repaired by a qualified person.
Water appears around the appliance	Temporary start-up condensation; wet fuel or prolonged low water/return temperature; loose connection or actual boiler leak.	Allow the appliance and system to warm up; use dry fuel and correct operating conditions. If moisture persists after full warm-up, stop using the appliance and have the water circuit checked for leakage.
Low flow-water temperature / insufficient heat to water circuit	Weak circulation; excessive heat demand or system volume; wet/poor fuel; low combustion rate.	Check circulation and pump operation; bleed the system; use suitable dry fuel; verify that the connected heating system is correctly sized for the appliance.

If the cause of a malfunction cannot be identified and safely corrected, stop using the appliance and contact a qualified installer or authorised service technician.



7. CAUTION!

- Do not pour water onto hot ceramic glass or clean it with a wet cloth while it is hot. Although ceramic glass is heat-resistant, sudden thermal shock may cause the glass to break.
- Do not place very cold objects on the hot top plate, as sudden thermal shock may cause damage or cracking.
- It is prohibited to use gas, alcohol or any other flammable liquid or fuel for lighting or operating the appliance.
- During operation, certain parts of the appliance can reach very high temperatures. Exercise caution and use the protective glove where required. Do not allow children to play near the appliance or handle it.
- Do not make any structural modifications to the appliance without the manufacturer's permission. Use only replacement parts recommended by the manufacturer.

Safety in abnormal operation:
- In the event of malfunction or overheating, stop adding fuel, close the combustion air controls and allow the appliance to cool down safely. If the water temperature continues to rise, ensure that the installed thermal safety device can operate and contact a qualified installer or service technician. Do not attempt to cool an overheated appliance by pouring water into the firebox.
-In case of a chimney fire, close the combustion air controls, call the fire service and have the chimney inspected before further use.
- Do not operate the appliance if the heating system is not filled and vented, if water circulation is blocked, or if required safety devices are not operational. Never close or isolate safety/expansion pipework during appliance operation.